

SEQUENCE LISTING

<110> National Institute of Advanced Industrial Science and Technology
Fujirebio Incorporated

<120> β 1, 3-N-ACETYL-D-GALACTOSAMINE TRANSFERASE PROTEIN, NUCLEIC ACID
ENCODING THE SAME AND METHOD OF EXAMINING CANCERATION USING THE SAME

<130> PC/S-84-6

<160> 27

<210> 1

<211> 1503

<212> DNA

<213> Homo sapiens

<400> 1

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<210> 2

<211> 500

<212> PRT

<213> Homo sapiens

<400> 2

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				20				25					30		
Gly	Ala	Gly	Pro	Ala	Asp	Gln	Leu	Ala	Leu	Phe	Pro	Gln	Trp	Lys	Ser
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Thr	His	Tyr	Asp	Val	Val	Val	Gly	Val	Leu	Ser	Ala	Arg	Asn	Asn	His

50		55		60
Glu Leu Arg Asn Val	Ile Arg Ser Thr Trp Met Arg His Leu Leu Gln			
65		70		75
His Pro Thr Leu Ser Gln Arg Val Leu Val Lys Phe Ile Ile Gly Ala				80
	85		90	95
His Gly Cys Glu Val Pro Val Glu Asp Arg Glu Asp Pro Tyr Ser Cys				
100		105		110
Lys Leu Leu Asn Ile Thr Asn Pro Val Leu Asn Gln Glu Ile Glu Ala				
115		120		125
Phe Ser Leu Ser Glu Asp Thr Ser Ser Gly Leu Pro Glu Asp Arg Val				
130		135		140
Val Ser Val Ser Phe Arg Val Leu Tyr Pro Ile Val Ile Thr Ser Leu				
145		150		155
Gly Val Phe Tyr Asp Ala Asn Asp Val Gly Phe Gln Arg Asn Ile Thr				
	165		170	175
Val Lys Leu Tyr Gln Ala Glu Gln Glu Glu Ala Leu Phe Ile Ala Arg				
180		185		190
Phe Ser Pro Pro Ser Cys Gly Val Gln Val Asn Lys Leu Trp Tyr Lys				
195		200		205
Pro Val Glu Gln Phe Ile Leu Pro Glu Ser Phe Glu Gly Thr Ile Val				
210		215		220
Trp Glu Ser Gln Asp Leu His Gly Leu Val Ser Arg Asn Leu His Lys				
225		230		235
Val Thr Val Asn Asp Gly Gly Gly Val Leu Arg Val Ile Thr Ala Gly				
	245		250	255
Glu Gly Ala Leu Pro His Glu Phe Leu Glu Gly Val Glu Gly Val Ala				
260		265		270
Gly Gly Phe Ile Tyr Thr Ile Gln Glu Gly Asp Ala Leu Leu His Asn				
275		280		285

Leu His Ser Arg Pro Gln Arg Leu Ile Asp His Ile Arg Asn Leu His
 290 295 300
 Glu Glu Asp Ala Leu Leu Lys Glu Glu Ser Ser Ile Tyr Asp Asp Ile
 305 310 315 320
 Val Phe Val Asp Val Val Asp Thr Tyr Arg Asn Val Pro Ala Lys Leu
 325 330 335
 Leu Asn Phe Tyr Arg Trp Thr Val Glu Thr Thr Ser Phe Asn Leu Leu
 340 345 350
 Leu Lys Thr Asp Asp Asp Cys Tyr Ile Asp Leu Glu Ala Val Phe Asn
 355 360 365
 Arg Ile Val Gln Lys Asn Leu Asp Gly Pro Asn Phe Trp Trp Gly Asn
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 Glu Tyr Pro Ser Pro Ala Tyr Pro Ala Phe Ala Cys Gly Ser Gly Tyr
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 Val Ile Ser Lys Asp Ile Val Lys Trp Leu Ala Ser Asn Ser Gly Arg
 420 425 430
 Leu Lys Thr Tyr Gln Gly Glu Asp Val Ser Met Gly Ile Trp Met Ala
 435 440 445
 Ala Ile Gly Pro Lys Arg Tyr Gln Asp Ser Leu Trp Leu Cys Glu Lys
 450 455 460
 Thr Cys Glu Thr Gly Met Leu Ser Ser Pro Gln Tyr Ser Pro Trp Glu
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<210> 3

<211> 1515

<212> DNA

<213> Mouse

<400> 3

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gctcgaaata accacgaact tcgaaatgtg ataaggaaca cctggctgaa gaatttgcctg 240
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<210> 4

<211> 504

<212> PRT

<213> Mouse

<400> 4

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				20				25					30		
Thr	Gly	Pro	Ser	Ala	Ala	Asp	Gln	Ser	Ala	Leu	Phe	Pro	His	Trp	Lys
				35			40					45			
Phe	Ser	His	Tyr	Asp	Val	Val	Val	Gly	Val	Leu	Ser	Ala	Arg	Asn	Asn
				50			55					60			
His	Glu	Leu	Arg	Asn	Val	Ile	Arg	Asn	Thr	Trp	Leu	Lys	Asn	Leu	Leu
65					70					75				80	
His	His	Pro	Thr	Leu	Ser	Gln	Arg	Val	Leu	Val	Lys	Phe	Ile	Ile	Gly
					85					90				95	
Ala	Arg	Gly	Cys	Glu	Val	Pro	Val	Glu	Asp	Arg	Glu	Asp	Pro	Tyr	Ser
					100				105					110	
Cys	Arg	Leu	Leu	Asn	Ile	Thr	Asn	Pro	Val	Leu	Asn	Gln	Glu	Ile	Glu
					115				120				125		
Ala	Phe	Ser	Phe	Pro	Glu	Asp	Ala	Ser	Ser	Ser	Arg	Leu	Ser	Glu	Asp
					130				135					140	
Arg	Val	Val	Ser	Val	Ser	Phe	Arg	Val	Leu	Tyr	Pro	Ile	Val	Ile	Thr

145	150	155	160
Ser Leu Gly Val Phe Tyr Asp Ala Ser Asp Val Gly Phe Gln Arg Asn			
	165	170	175
Ile Thr Val Lys Leu Tyr Gln Thr Glu Gln Glu Glu Ala Leu Phe Ile			
	180	185	190
Ala Arg Phe Ser Pro Pro Ser Cys Gly Val Gln Val Asn Lys Leu Trp			
	195	200	205
Tyr Lys Pro Val Glu Gln Phe Ile Leu Pro Glu Ser Phe Glu Gly Thr			
	210	215	220
Ile Val Trp Glu Ser Gln Asp Leu His Gly Leu Val Ser Arg Asn Leu			
225	230	235	240
His Arg Val Thr Val Asn Asp Gly Gly Gly Val Leu Arg Val Leu Ala			
	245	250	255
Ala Gly Glu Gly Ala Leu Pro His Glu Phe Met Glu Gly Val Glu Gly			
	260	265	270
Val Ala Gly Gly Phe Ile Tyr Thr Val Gln Glu Gly Asp Ala Leu Leu			
	275	280	285
Arg Ser Leu Tyr Ser Arg Pro Gln Arg Leu Ala Asp His Ile Gln Asp			
	290	295	300
Leu Gln Val Glu Asp Ala Leu Leu Gln Glu Glu Ser Ser Val His Asp			
305	310	315	320
Asp Ile Val Phe Val Asp Val Val Asp Thr Tyr Arg Asn Val Pro Ala			
	325	330	335
Lys Leu Leu Asn Phe Tyr Arg Trp Thr Val Glu Ser Thr Ser Phe Asp			
	340	345	350
Leu Leu Leu Lys Thr Asp Asp Asp Cys Tyr Ile Asp Leu Glu Ala Val			
	355	360	365
Phe Asn Arg Ile Ala Gln Lys Asn Leu Asp Gly Pro Asn Phe Trp Trp			
	370	375	380

Gly Asn Phe Arg Leu Asn Trp Ala Val Asp Arg Thr Gly Lys Trp Gln
 385 390 395 400
 Glu Leu Glu Tyr Pro Ser Pro Ala Tyr Pro Ala Phe Ala Cys Gly Ser
 405 410 415
 Gly Tyr Val Ile Ser Lys Asp Ile Val Asp Trp Leu Ala Gly Asn Ser
 420 425 430
 Arg Arg Leu Lys Thr Tyr Gln Gly Glu Asp Val Ser Met Gly Ile Trp
 435 440 445
 Met Ala Ala Ile Gly Pro Lys Arg His Gln Asp Ser Leu Trp Leu Cys
 450 455 460
 Glu Lys Thr Cys Glu Thr Gly Met Leu Ser Ser Pro Gln Tyr Ser Pro
 465 470 475 480
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 Cys Gln Cys Glu Ala Lys Val Arg
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<210> 5

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 5' primer for PCR

<400> 5

cccaagcttg ggccatgcaga tcagttggcc ttatttc

37

<210> 6

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 3' primer for PCR

<400> 6

aacgcggatc cgcgctgtta tcttgcttga catcgacaag ga

42

<210> 7

<211> 56

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 5' primer for PCR

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56

<210> 8

<211> 58

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: 3' primer for PCR

<400> 8

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<210> 9

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ig κ signal sequence

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Val Ile Met Ser Arg Gly

20 22

<210> 10

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: FLAG peptide

<400> 10

Asp Tyr Lys Asp Asp Asp Asp Lys

1 5 8

<210> 11

<211> 94

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer OT3

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94

<210> 12

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer OT20

<400> 12

cgggatccat gcattttcaa gtgcag

26

<210> 13

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer OT21

<400> 13

ggaattcttg tcatcgtcgt ccttg

25

<210> 14

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 5' primer for PCR

<400> 14

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21

<210> 15

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 3' primer for PCR

<400> 15

ctgaagcgag caatgaagag

20

<210> 16

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: TaqMan Probe

<400> 16

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32

<210> 17

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 5' primer for PCR

<400> 17

cccaagcttg ggagcgcggc agatcaatca gccttat

37

<210> 18

<211> 53

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: 3' primer for PCR

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<210> 19

<211> 248

<212> PRT

<213> Homo sapiens

<220>

<223> b3Gal-T1

<400> 19

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Gln	Ala	Ile	Arg	Glu	Thr	Trp	Gly	Asp	Glu	Asn	Asn	Phe	Lys	Gly	Ile
			20					25					30		
Lys	Ile	Ala	Thr	Leu	Phe	Leu	Leu	Gly	Lys	Asn	Ala	Asp	Pro	Val	Leu
		35					40					45			
Asn	Gln	Met	Val	Glu	Gln	Glu	Ser	Gln	Ile	Phe	His	Asp	Ile	Ile	Val
	50					55					60				
Glu	Asp	Phe	Ile	Asp	Ser	Tyr	His	Asn	Leu	Thr	Leu	Lys	Thr	Leu	Met
65				70					75					80	
Gly	Met	Arg	Trp	Val	Ala	Thr	Phe	Cys	Ser	Lys	Ala	Lys	Tyr	Val	Met
			85						90					95	

Lys Thr Asp Ser Asp Ile Phe Val Asn Met Asp Asn Leu Ile Tyr Lys
 100 105 110
 Leu Leu Lys Pro Ser Thr Lys Pro Arg Arg Arg Tyr Phe Thr Gly Tyr
 115 120 125
 Val Ile Asn Gly Gly Pro Ile Arg Asp Val Arg Ser Lys Trp Tyr Met
 130 135 140
 Pro Arg Asp Leu Tyr Pro Asp Ser Asn Tyr Pro Pro Phe Cys Ser Gly
 145 150 155 160
 Thr Gly Tyr Ile Phe Ser Ala Asp Val Ala Glu Leu Ile Tyr Lys Thr
 165 170 175
 Ser Leu His Thr Arg Leu Leu His Leu Glu Asp Val Tyr Val Gly Leu
 180 185 190
 Ser Leu His Thr Arg Leu Leu His Leu Glu Asp Val Tyr Val Gly Leu
 195 200 205
 His Trp Lys Met Ala Tyr Ser Leu Cys Arg Tyr Arg Arg Val Ile Thr
 210 215 220
 Val His Gln Ile Ser Pro Glu Glu Met His Arg Ile Trp Asn Asp Met
 225 230 235 240
 Ser Ser Lys Lys His Leu Arg Cys
 245 248

<210> 20

<211> 271

<212> PRT

<213> Homo sapiens

<220>

<223> b3Gal-T2

<400> 20

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			20					25						30	
Gln	Ile	Thr	Arg	Ile	Phe	Leu	Leu	Gly	Leu	Ser	Ile	Lys	Leu	Asn	Gly
		35						40						45	
Tyr	Leu	Gln	Arg	Ala	Ile	Leu	Glu	Glu	Ser	Arg	Gln	Tyr	His	Asp	Ile
	50						55					60			
Ile	Gln	Gln	Glu	Tyr	Leu	Asp	Thr	Tyr	Tyr	Asn	Leu	Thr	Ile	Lys	Thr
65					70					75					80
Leu	Met	Gly	Met	Asn	Trp	Val	Ala	Thr	Tyr	Cys	Pro	His	Ile	Pro	Tyr
				85						90					95
Val	Met	Lys	Thr	Asp	Ser	Asp	Met	Phe	Val	Asn	Thr	Glu	Tyr	Leu	Ile
			100							105					110
Asn	Lys	Leu	Leu	Lys	Pro	Asp	Leu	Pro	Pro	Arg	His	Asn	Tyr	Phe	Thr
			115							120					125
Gly	Tyr	Leu	Met	Arg	Gly	Tyr	Ala	Pro	Asn	Arg	Asn	Lys	Asp	Ser	Lys
	130					135									140
Trp	Tyr	Met	Pro	Pro	Asp	Leu	Tyr	Pro	Ser	Glu	Arg	Tyr	Pro	Val	Phe
145						150					155				160
Cys	Ser	Gly	Thr	Gly	Tyr	Val	Phe	Ser	Gly	Asp	Leu	Ala	Glu	Lys	Ile
				165						170					175
Phe	Lys	Val	Ser	Leu	Gly	Ile	Arg	Arg	Leu	His	Leu	Glu	Asp	Val	Tyr
			180							185					190
Val	Gly	Ile	Cys	Leu	Ala	Lys	Leu	Arg	Ile	Asp	Pro	Val	Pro	Pro	Pro
			195							200					205
Asn	Glu	Phe	Val	Phe	Asn	His	Trp	Arg	Val	Ser	Tyr	Ser	Ser	Cys	Lys
	210														220

Tyr	Val	Met	Lys	Thr	Asp	Thr	Asp	Val	Phe	Ile	Asn	Thr	Gly	Asn	Leu
			100					105					110		
Val	Lys	Tyr	Leu	Leu	Asn	Leu	Asn	His	Ser	Glu	Lys	Phe	Phe	Thr	Gly
			115					120					125		
Tyr	Pro	Leu	Ile	Asp	Asn	Tyr	Ser	Tyr	Arg	Gly	Phe	Tyr	Gln	Lys	Thr
			130					135					140		
His	Ile	Ser	Tyr	Gln	Glu	Tyr	Pro	Phe	Lys	Val	Phe	Pro	Pro	Tyr	Cys
			145					150				155			160
Ser	Gly	Leu	Gly	Tyr	Ile	Met	Ser	Arg	Asp	Leu	Val	Pro	Arg	Ile	Tyr
								165				170			175
Glu	Met	Met	Gly	His	Val	Lys	Pro	Ile	Lys	Phe	Glu	Asp	Val	Tyr	Val
								180				185			190
Gly	Ile	Cys	Leu	Asn	Leu	Leu	Lys	Val	Asn	Ile	His	Ile	Pro	Glu	Asp
								195				200			205
Thr	Asn	Leu	Phe	Phe	Leu	Tyr	Arg	Ile	His	Leu	Asp	Val	Cys	Gln	Leu
								210				215			220
Arg	Arg	Val	Ile	Ala	Ala	His	Gly	Phe	Ser	Ser	Lys	Glu	Ile	Ile	Thr
								225				230			235
Phe	Trp	Gln	Val	Met	Leu	Arg	Asn	Thr	Thr	Cys	His	Tyr			
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<210> 22

<211> 253

<212> PRT

<213> Homo sapiens

<220>

<223> b3Gal-T5

<400> 22

Phe	Leu	Val	Leu	Leu	Val	Thr	Ser	Ser	His	Lys	Gln	Leu	Ala	Glu	Arg
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			20					25					30		
Gln	Leu	Lys	Thr	Phe	Phe	Leu	Leu	Gly	Thr	Thr	Ser	Ser	Ala	Ala	Glu
		35						40				45			
Thr	Lys	Glu	Val	Asp	Gln	Glu	Ser	Gln	Arg	His	Gly	Asp	Ile	Ile	Gln
	50					55					60				
Lys	Asp	Phe	Leu	Asp	Val	Tyr	Tyr	Asn	Leu	Thr	Leu	Lys	Thr	Met	Met
65				70						75				80	
Gly	Ile	Glu	Trp	Val	His	Arg	Phe	Cys	Pro	Gln	Ala	Ala	Phe	Val	Met
				85					90					95	
Lys	Thr	Asp	Ser	Asp	Met	Phe	Ile	Asn	Val	Asp	Tyr	Leu	Thr	Glu	Leu
			100						105					110	
Leu	Leu	Lys	Lys	Asn	Arg	Thr	Thr	Arg	Phe	Phe	Thr	Gly	Phe	Leu	Lys
		115						120					125		
Leu	Asn	Glu	Phe	Pro	Ile	Arg	Gln	Pro	Phe	Ser	Lys	Trp	Phe	Val	Ser
	130					135						140			
Lys	Ser	Glu	Tyr	Pro	Trp	Asp	Arg	Tyr	Pro	Pro	Phe	Cys	Ser	Gly	Thr
145					150					155				160	
Gly	Tyr	Val	Phe	Ser	Gly	Asp	Val	Ala	Ser	Gln	Val	Tyr	Asn	Val	Ser
				165					170					175	
Lys	Ser	Val	Pro	Tyr	Ile	Lys	Leu	Glu	Asp	Val	Phe	Val	Gly	Leu	Cys
			180						185				190		
Leu	Glu	Arg	Leu	Asn	Ile	Arg	Leu	Glu	Glu	Leu	His	Ser	Gln	Pro	Thr
		195					200						205		
Phe	Phe	Pro	Gly	Gly	Leu	Arg	Phe	Ser	Val	Cys	Leu	Phe	Arg	Arg	Ile
	210						215						220		

Leu Arg Ala Arg Glu Pro Ala Arg Arg Arg Arg Leu Tyr Trp Gly Phe
 115 120 125
 Phe Ser Gly Arg Gly Arg Val Lys Pro Gly Gly Arg Trp Arg Glu Ala
 130 135 140
 Ala Trp Gln Leu Cys Asp Tyr Tyr Leu Pro Tyr Ala Leu Gly Gly Gly
 145 150 155 160
 Tyr Val Leu Ser Ala Asp Leu Val His Tyr Leu Arg Leu Ser Arg Asp
 165 170 175
 Tyr Leu Arg Ala Trp His Ser Glu Asp Val Ser Leu Gly Ala Trp Leu
 180 185 190
 Ala Pro Val Asp Val Gln Arg Glu His Asp Pro Arg Phe Asp Thr Glu
 195 200 205
 Tyr Arg Ser Arg Gly Cys Ser Asn Gln Tyr Leu Val Thr His Lys Gln
 210 215 220
 Ser Leu Glu Asp Met Leu Glu Lys His Ala Thr Leu Ala Arg Glu Gly
 225 230 235 240
 Arg Leu Cys Lys Arg Glu Val Gln Leu Arg Leu Ser Tyr Val Tyr Asp
 245 250 255
 Trp Ser Ala Pro Pro Ser Gln Cys Cys Gln Arg Arg Glu Gly Ile Pro
 260 265 270 272

<210> 24

<211> 255

<212> PRT

<213> Homo sapiens

<220>

<223> b3GnT2

<400> 24

Phe	Leu	Leu	Leu	Ala	Ile	Lys	Ser	Leu	Thr	Pro	His	Phe	Ala	Arg	Arg
1				5					10					15	
Gln	Ala	Ile	Arg	Glu	Ser	Trp	Gly	Gln	Glu	Ser	Asn	Ala	Gly	Asn	Gln
			20					25					30		
Thr	Val	Val	Arg	Val	Phe	Leu	Leu	Gly	Gln	Thr	Pro	Pro	Glu	Asp	Asn
			35					40					45		
His	Pro	Asp	Leu	Ser	Asp	Met	Leu	Lys	Phe	Glu	Ser	Glu	Lys	His	Gln
			50				55					60			
Asp	Ile	Leu	Met	Trp	Asn	Tyr	Arg	Asp	Thr	Phe	Phe	Asn	Leu	Ser	Leu
65					70					75					80
Lys	Glu	Val	Leu	Phe	Leu	Arg	Trp	Val	Ser	Thr	Ser	Cys	Pro	Asp	Thr
				85						90				95	
Glu	Phe	Val	Phe	Lys	Gly	Asp	Asp	Asp	Val	Phe	Val	Asn	Thr	His	His
				100					105					110	
Ile	Leu	Asn	Tyr	Leu	Asn	Ser	Leu	Ser	Lys	Thr	Lys	Ala	Lys	Asp	Leu
			115						120					125	
Phe	Ile	Gly	Asp	Val	Ile	His	Asn	Ala	Gly	Pro	His	Arg	Asp	Lys	Lys
			130					135						140	
Leu	Lys	Tyr	Tyr	Ile	Pro	Glu	Val	Val	Tyr	Ser	Gly	Leu	Tyr	Pro	Pro
145					150					155					160
Tyr	Ala	Gly	Gly	Gly	Gly	Phe	Leu	Tyr	Ser	Gly	His	Leu	Ala	Leu	Arg
					165					170				175	
Leu	Tyr	His	Ile	Thr	Asp	Gln	Val	His	Leu	Tyr	Pro	Ile	Asp	Asp	Val
			180						185					190	
Tyr	Thr	Gly	Met	Cys	Leu	Gln	Lys	Leu	Gly	Leu	Val	Pro	Glu	Lys	His
			195					200						205	
Lys	Gly	Phe	Arg	Thr	Phe	Asp	Ile	Glu	Glu	Lys	Asn	Lys	Asn	Asn	Ile
			210				215							220	

Cys	Ser	Tyr	Val	Asp	Leu	Met	Leu	Val	His	Ser	Arg	Lys	Pro	Gln	Glu
225					230					235					240
Met	Ile	Asp	Ile	Trp	Ser	Gln	Leu	Gln	Ser	Ala	His	Leu	Lys	Cys	
				245					250					255	

<210> 25

<211> 265

<212> PRT

<213> Homo sapiens

<220>

<223> b3GnT3

<400> 25

Phe	Leu	Leu	Leu	Val	Ile	Lys	Ser	Ser	Pro	Ser	Asn	Tyr	Val	Arg	Arg
1				5					10					15	
Glu	Leu	Leu	Arg	Arg	Thr	Trp	Gly	Arg	Glu	Arg	Lys	Val	Arg	Gly	Leu
			20				25						30		
Gln	Leu	Arg	Leu	Leu	Phe	Leu	Val	Gly	Thr	Ala	Ser	Asn	Pro	His	Glu
		35				40						45			
Ala	Arg	Lys	Val	Asn	Arg	Leu	Leu	Glu	Leu	Glu	Ala	Gln	Thr	His	Gly
	50				55					60					
Asp	Ile	Leu	Gln	Trp	Asp	Phe	His	Asp	Ser	Phe	Phe	Asn	Leu	Thr	Leu
65				70					75				80		
Lys	Gln	Val	Leu	Phe	Leu	Gln	Trp	Gln	Glu	Thr	Arg	Cys	Ala	Asn	Ala
			85				90						95		
Ser	Phe	Val	Leu	Asn	Gly	Asp	Asp	Asp	Val	Phe	Ala	His	Thr	Asp	Asn
			100				105						110		
Met	Val	Phe	Tyr	Leu	Gln	Asp	His	Asp	Pro	Gly	Arg	His	Leu	Phe	Val

115	120	125
Gly Gln Leu Ile Gln Asn Val	Gly Pro Ile Arg Ala Phe Trp Ser Lys	
130	135	140
Tyr Tyr Val Pro Glu Val Val Thr Gln Asn Glu Arg Tyr Pro Pro Tyr		
145	150	155
Cys Gly Gly Gly Gly Phe Leu Leu Ser Arg Phe Thr Ala Ala Ala Leu		160
165	170	175
Arg Arg Ala Ala His Val Leu Asp Ile Phe Pro Ile Asp Asp Val Phe		
180	185	190
Leu Gly Met Cys Leu Glu Leu Glu Gly Leu Lys Pro Ala Ser His Ser		
195	200	205
Gly Ile Arg Thr Ser Gly Val Arg Ala Pro Ser Gln His Leu Ser Ser		
210	215	220
Phe Asp Pro Cys Phe Tyr Arg Asp Leu Leu Leu Val His Arg Phe Leu		
225	230	235
Pro Tyr Glu Met Leu Leu Met Trp Asp Ala Leu Asn Gln Pro Asn Leu		240
245	250	255
Thr Cys Gly Asn Gln Thr Gln Ile Tyr		
260	265	

<210> 26

<211> 260

<212> PRT

<213> Homo sapiens

<220>

<223> b3GnT4

<400> 26

Phe Leu Leu Leu Ala Ile Lys Ser Gln Pro Gly His Val Glu Arg Arg
1 5 10 15
Ala Ala Ile Arg Ser Thr Trp Gly Arg Val Gly Gly Trp Ala Arg Gly
 20 25 30
Arg Gln Leu Lys Leu Val Phe Leu Leu Gly Val Ala Gly Ser Ala Pro
 35 40 45
Pro Ala Gln Leu Leu Ala Tyr Glu Ser Arg Glu Phe Asp Asp Ile Leu
 50 55 60
Gln Trp Asp Phe Thr Glu Asp Phe Phe Asn Leu Thr Leu Lys Glu Leu
65 70 75 80
His Leu Gln Arg Trp Val Val Ala Ala Cys Pro Gln Ala His Phe Met
 85 90 95
Leu Lys Gly Asp Asp Asp Val Phe Val His Val Pro Asn Val Leu Glu
 100 105 110
Phe Leu Asp Gly Trp Asp Pro Ala Gln Asp Leu Leu Val Gly Asp Val
 115 120 125
Ile Arg Gln Ala Leu Pro Asn Arg Asn Thr Lys Val Lys Tyr Phe Ile
 130 135 140
Pro Pro Ser Met Tyr Arg Ala Thr His Tyr Pro Pro Tyr Ala Gly Gly
145 150 155 160
Gly Gly Tyr Val Met Ser Arg Ala Thr Val Arg Arg Leu Gln Ala Ile
 165 170 175
Met Glu Asp Ala Glu Leu Phe Pro Ile Asp Asp Val Phe Val Gly Met
 180 185 190
Cys Leu Arg Arg Leu Gly Leu Ser Pro Met His His Ala Gly Phe Lys
 195 200 205
Thr Phe Gly Ile Arg Arg Pro Leu Asp Pro Leu Asp Pro Cys Leu Tyr
 210 215 220
Arg Gly Leu Leu Leu Val His Arg Leu Ser Pro Leu Glu Met Trp Thr

225 230 235 240
 Met Trp Ala Leu Val Thr Asp Glu Gly Leu Lys Cys Ala Ala Gly Pro
 245 250 255
 Ile Pro Gln Arg
 260

<210> 27

<211> 290

<212> PRT

<213> Homo sapiens

<220>

<223> b3GnT5

<400> 27

Leu Leu Leu Leu Phe Val Lys Thr Ala Pro Glu Asn Tyr Asp Arg Arg
 1 5 10 15
 Ser Gly Ile Arg Arg Thr Trp Gly Asn Glu Asn Tyr Val Arg Ser Gln
 20 25 30
 Leu Asn Ala Asn Ile Lys Thr Leu Phe Ala Leu Gly Thr Pro Asn Pro
 35 40 45
 Leu Glu Gly Glu Glu Leu Gln Arg Lys Leu Ala Trp Glu Asp Gln Arg
 50 55 60
 Tyr Asn Asp Ile Ile Gln Gln Asp Phe Val Asp Ser Phe Tyr Asn Leu
 65 70 75 80
 Thr Leu Lys Leu Leu Met Gln Phe Ser Trp Ala Asn Thr Tyr Cys Pro
 85 90 95
 His Ala Lys Phe Leu Met Thr Ala Asp Asp Asp Ile Phe Ile His Met
 100 105 110

Pro Asn Leu Ile Glu Tyr Leu Gln Ser Leu Glu Gln Ile Gly Val Gln
 115 120 125
 Asp Phe Trp Ile Gly Arg Val His Arg Gly Ala Pro Pro Ile Arg Asp
 130 135 140
 Lys Ser Ser Lys Tyr Tyr Val Ser Tyr Glu Met Tyr Gln Trp Pro Ala
 145 150 155 160
 Tyr Pro Asp Tyr Thr Ala Gly Ala Ala Tyr Val Ile Ser Gly Asp Val
 165 170 175
 Ala Ala Lys Val Tyr Glu Ala Ser Gln Thr Leu Asn Ser Ser Leu Tyr
 180 185 190
 Ile Asp Asp Val Phe Met Gly Leu Cys Ala Asn Lys Ile Gly Ile Val
 195 200 205
 Pro Gln Asp His Val Phe Phe Ser Gly Glu Gly Lys Thr Pro Tyr His
 210 215 220
 Pro Cys Ile Tyr Glu Lys Met Met Thr Ser His Gly His Leu Glu Asp
 225 230 235 240
 Leu Gln Asp Leu Trp Lys Asn Ala Thr Asp Pro Lys Val Lys Thr Ile
 245 250 255
 Ser Lys Gly Phe Phe Gly Gln Ile Tyr Cys Arg Leu Met Lys Ile Ile
 260 265 270
 Leu Leu Cys Lys Ile Ser Tyr Val Asp Thr Tyr Pro Cys Arg Ala Ala
 275 280 285
 Phe Ile
 290